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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,006	07/09/2003	Luca Rigazio	9432-000241	1026

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EXAMINER	
JACKSON, JAKIEDA R	
ART UNIT	**PAPER NUMBER**
2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,006	RIGAZIO ET AL.	
	Examiner	Art Unit	
	Jakieda R. Jackson	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-2, 6-22, and 26-40** are rejected under 35 U.S.C. 102(e) as being anticipated by Suhm et al. (USPN 6,823,054), hereinafter referenced as Suhm.

Regarding **claims 1 and 21**, Suhm discloses a speech data mining system and method, hereinafter referenced as a system for use in generating a rich transcription having utility in call center management, comprising:

a speech differentiation module differentiating between speech of at least two interacting speakers (speaker change detector; column 19, lines 42-61 with column 20, lines 15-59);

a speech recognition module (speech recognition system) improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker employed as a reference speaker (column 14, lines 42-65 with column 20, lines 15-59); and

a transcript generation module generating a rich transcript based at least in part on recognized speech of the second speaker (transcript; column 18, lines 34-54).

Regarding **claims 2 and 22**, Suhm discloses a system wherein said speech differentiation module is adapted to receive speech input from the first speaker on a first channel, to receive speech input from the second speaker on a second channel, and to differentiate between the first speaker and the second speaker by identifying speech of the first speaker with speech received on the first channel (event detection; column 16, lines 12-43), and identifying speech of the second speaker with speech received on the second channel (column 20, lines 8-65).

Regarding **claims 6 and 26**, Suhm discloses a system wherein said speech recognition module is adapted to identify a topic with respect to which the speakers are interacting (topics; column 19, lines 32-61), and to employ a focused language model to assist in speech recognition based on the topic (column 20, lines 15-59).

Regarding **claims 7 and 27**, Suhm discloses a system wherein said speech recognition module is adapted to receive an explicit topic selection from one of the speakers (column 19, lines 32-61 with column 21, lines 1-9).

Regarding **claims 8 and 28**, Suhm discloses a system wherein said speech recognition module is adapted to prompt a speaker corresponding to a call center customer to explicitly select one of a plurality of predetermined topics by pressing a corresponding button of a telephone keypad (touch-tone; column 10, lines 12-21 with column 16, lines 12-21 and column 17, lines 1-13).

Regarding **claims 9 and 29**, Suhm discloses a system wherein said speech recognition module is adapted to identify a predetermined topic associated with an electronic form selected by call center personnel (predetermined; column 20, lines 15-59).

Regarding **claims 10 and 30**, Suhm discloses a system wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, and to identify a predetermined topic based on the keyword (true reason of call; column 21, lines 1-9).

Regarding **claims 11 and 31**, Suhm discloses a system wherein said speech recognition module is adapted to extract context from a speech recognition result of the first speaker (features to be extracted; column 19, lines 32-61), and to employ the context extracted from the speech recognition result of the first speaker as context in a language model utilized to assist in recognizing speech of the second speaker (speaker models; column 20, lines 15-59).

Regarding **claims 12 and 32**, Suhm discloses a system wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of the first speaker (shares), and to supplement a constraint list used in recognizing speech of the second speaker based on the keyword extracted from the speech recognition result of the first speaker (column 20, lines 15-59).

Regarding **claims 13 and 33**, Suhm discloses a system wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of the first speaker (shares), and to rescore recognition candidates generated

during recognition of speech of the second speaker based on the keyword extracted from the speech recognition result of the first speaker (column 20, lines 15-59 and column 39, lines 33-50).

Regarding **claims 14 and 34**, Suhm discloses a system wherein said speech recognition module is adapted to detect interruption of speech of one speaker by speech of another speaker (speech/non-speech detector), and to employ the interruption as context in a language model utilized to assist in recognizing speech of the second speaker (column 19, lines 32-61).

Regarding **claims 15 and 35**, Suhm discloses a system wherein said speech recognition module is adapted to detect an interruption of speech of one speaker by speech of another speaker (inherent in end-to-end recordings), and to record an instance of the interruption as mined speech data (column 6, lines 21-34 with column 20, lines 15-59).

Regarding **claims 16 and 36**, Suhm discloses a system wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, to identify a frustration phrase associated with the keyword, and to record an instance of the frustration phrase as mined speech data (end-to-end recordings; column 6, lines 21-34 with column 20, lines 15-59).

Regarding **claims 17 and 37**, Suhm discloses a system wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, to identify a polity expression

associated with the keyword (polite), and to record an instance of the polity expression as mined speech data (column 20, lines 15-59).

Regarding **claims 18 and 38**, Suhm discloses a system wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, to identify a context corresponding to at least one of a topic (topic), complaint, solution, and resolution associated with the keyword, and to record an instance of the context as mined speech data (column 20, lines 15-59).

Regarding **claims 19 and 39**, Suhm discloses a system wherein said speech recognition module is adapted to identify a number of interaction turns based on a shift in interaction from speaker to speaker (repeatedly request), and to record the number of turns as mined speech data (column 15, lines 8-18).

Regarding **claims 20 and 40**, Suhm discloses a system comprising a quality management subsystem employing mined speech data as feedback to at least one of a call center quality management process (marked) and a consumptible quality management process (quality; column 20, lines 15-59).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 3-5 and 23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Suhm in view of Skerpac (PGPUB 2002/0104027).

Regarding **claims 3 and 23**, Suhm discloses a data mining system, but does not specifically teach a system wherein said speech recognition module is adapted to employ the first speaker as the reference speaker based on quality of the first channel being higher than quality of the second channel.

Skerpac discloses a system wherein said speech recognition module is adapted to employ the first speaker as the reference speaker based on quality of the first channel being higher than quality of the second channel (high quality acoustic channel; column 5, paragraph 0050), to meet high security requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suhm's system wherein said speech recognition module is adapted to employ the first speaker as the reference speaker based on quality of the first channel being higher than quality of the second channel, as taught by Skerpac, for robust security and intuitive privacy schemes and for protection from unauthorized users (column 6, paragraph 0053).

Regarding **claims 4 and 24**, Suhm discloses a data mining system, but does not specifically teach a system wherein said speech recognition module is adapted to employ the first speaker as the reference speaker based on availability of a speech model adapted to the first speaker.

Skerpac discloses a system wherein said speech recognition module is adapted to employ the first speaker as the reference speaker based on availability of a speech model adapted to the first speaker (inherent in speaker enrollment; column 5, paragraph 0050), to obtain the desired accuracy.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suhm's system wherein said speech recognition module is adapted to employ the first speaker as the reference speaker based on availability of a speech model adapted to the first speaker, as taught by Skerpac, for robust security and intuitive privacy schemes and for protection from unauthorized users (column 6, paragraph 0053).

Regarding **claims 5 and 25**, Suhm discloses a data mining system, but does not specifically teach a system wherein speech differentiation module is adapted to use speech biometric.

Skerpac discloses a system wherein speech differentiation module is adapted to:

use a speech biometric trained on speech of the first speaker to distinguish between speech of the first speaker and speech of another speaker (biometrics; column 2, paragraph 0011), to insure authentication and privacy.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suhm's system wherein speech differentiation module is adapted to use speech biometric, as taught by Skerpac, for robust security and intuitive privacy schemes and for protection from unauthorized users (column 6, paragraph 0053).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Scarano et al. (PGPUB 2004/0083099) disclose methods and appartus for audio data analysis and data mining using speech recognition.
- Boguraev et al. (PGPUB 2002/0178002) disclose a system and method, analyzing and displaying text transcripts of speech after imperfect speech recognition.
- Scarano et al. (USPN 7,076,427) disclose methods and apparatus for audio data monitoring and evaluation using speech recognition.
- Kanevsky et al. (USPN 6,529,902) disclose a method and system for off-line detection of textual topical changes and topic identification via likelihood based methods for improved language modeling.
- Mozer (PGPUB 2002/0194003) disclose client-server system and method.
- Wu et al. (USPN 7,023,979) disclose a telephony control system with intelligent call routing.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R. Jackson whose telephone number is 571.272.7619. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571.272.7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRJ
February 15, 2007

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